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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,748

12/29/2005

Jerome Delamare

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PEARNE & GORDON LLP
1801 EAST 9TH STREET
SUITE 1200
CLEVELAND, OH 44114-3108

EXAMINER

BARRERA, RAMON M

ART UNIT

PAPER NUMBER

2832

MAIL DATE

DELIVERY MODE

12/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,748	Applicant(s) DELAMARE ET AL.	
	Examiner RAMON M. BARRERA	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2009 and 24 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-19 and 29 is/are pending in the application.
- 4a) Of the above claim(s) 9-14, 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 18, 19 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 18, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over FR2828000, cited on applicant's IDS, in view of Uozumi or Mohler.

FR2828000 discloses a magnetic actuator including a mobile magnetic portion 1, a fixed magnetic portion 3 provided with at least two attraction areas 3-2 for the mobile magnetic portion, and means 4 for triggering the displacement of the mobile magnetic portion, the mobile magnetic portion being in levitation when it is not in contact with an attraction area, characterized in that each attraction area has a geometry conjugate to that of the face of the mobile magnetic portion which must come into contact with it.

FR2828000 did not disclose where the mobile magnetic portion includes a magnet-based part with reduced magnet weight. Either Uozumi (col. 2, lines 27-30) or Mohler (col. 4, lines 36-65) disclose magnetic armatures with mass removed from non-critical portions of their volumes, i.e., near pole surfaces, for the purpose of reducing their weight and increase their acceleration during energization. Since FR2828000, Uozumi, and Mohler are all from the same field of endeavor, the purpose disclosed by Uozumi or Mohler would have been recognized in the pertinent art of FR2828000. It would have been obvious at the time the invention was made to a person having

ordinary skill in the art to employ in FR2828000 a mobile magnetic portion having a reduced mass for the purpose of reducing its weight and increase its acceleration during energization. The shape of the reduced portion, i.e., holes, recesses, rectangular plate, etc., would have been an obvious matter of design choice, since applicant has not disclosed that the shape of the recess solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with recesses of multiple shapes. It would have been obvious to fill recesses with lesser density solid material to preserve the structural integrity of the armature against breakage. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to spare the edges of magnet-based part (200), i.e., the pole surfaces, which are facing both attraction areas from the reduced magnet weight for the purpose of not saturating the magnetic circuit, which would result in decreased efficiency of the actuator. See col. 4, lines 44-58, in Mohler, explaining this effect.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over FR2828000, cited on applicant's IDS, in view of Uozumi or Mohler, and further in view of Uetsuhara, et al.

FR2828000, in view of Uozumi or Mohler, did not disclose at least one of the attraction areas includes a dielectric portion so as to achieve capacitive contact when the mobile magnetic portion (20) is stuck on said attraction area. Uetsuhara, in fig. 9, discloses an attraction area including a dielectric portion 6 for achieving capacitive contact and reduced impact force when the mobile magnetic portion is stuck on said attraction area. It would have been obvious at the time the invention was made to one

of ordinary skill in the art to employ a dielectric portion in FR2828000 in view of Uozumi or Mohler for the purpose of achieving a reduced impact force when the mobile magnetic portion is stuck on said attraction area and inherently providing a capacitive contact.

Response to Arguments

4. Applicant's arguments filed 5/27/08 have been fully considered but they are not persuasive.

Applicant asserts Uozumi is not applicable to FR2828000 because Uozumi teaches reduction of magnet mass only where, upon actuation, magnetic flux density is low. With regards to Mohler, applicant's arguments address the condition that Mohler's mass reduction occurs at a periphery of the armature where, upon actuation, armature flux is low and away from the central core 18 where the magnetic flux is more concentrated. Applicant asserts FR2828000 lacks any region where, upon actuation, the magnetic flux density is low.

In response, it is noted both Uozumi and Mohler provide a general teaching of reducing armature mass for the purpose of allowing a "substantial increase in the print speed of the print head" (Uozumi abstract) and "to reduce its weight and increase its acceleration (Mohler abstract). Both Uozumi and Mohler provide a secondary teaching of mass reduction at an optimal location of the armature, i.e, away from the contact or polar surfaces where magnetic flux is more concentrated. These teachings may be applied to FR282800 in avoiding magnetic material mass reductions in the vicinity of the polar air gaps (physical contact regions).

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAMON M. BARRERA whose telephone number is (571)272-1987. The examiner can normally be reached on Monday through Friday from 11 to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ramon M Barrera/
Primary Examiner, Art Unit 2832

rmb